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On two *Oxypodinus* species from Madagascar, inhabitants of *Impatiens* inflorescences (Coleoptera: Staphylinidae, Aleocharinae)

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Abstract: Two species of *Oxypodinus* BERNHAUER from Madagascar are recorded. *Oxypodinus floricola* sp.n. is described and illustrated, and an additional record of *O. levasseuri* PACE is reported. The male secondary sexual characters of *O. levasseuri* are figured. According to observations in the field, both species inhabit *Impatiens* inflorescences.

Key words: Coleoptera, Staphylinidae, Aleocharinae, *Oxypodinus*, *Impatiens*, Madagascar, taxonomy, new species, new record, bionomics.

Introduction

The known distribution of the aleocharine genus *Oxypodinus* BERNHAUER 1901 of the Thamiaraeini is confined to Madagascar and La Réunion in the Malagasy subregion. Up to today, 15 species have been recorded from Madagascar (PACE 1999). Nothing appears to be known about the life history of the species.

Arne Erpenbach, University of Bonn (Germany), recently sent me some aleocharines for identification, which he had collected in the inflorescences of *Impatiens vilersii* CONSTANTIN & POISSON and of *Impatiens lyallii* BAKER (ERPENBACH pers. comm.). An examination of the material based on the synopsis by PACE (1999) revealed that the specimens referred to two species of *Oxypodinus*, *O. levasseuri* PACE and an undescribed species.

Material

The material referred to in this study is deposited in the following collections:

OÖLL..... Oberösterreichisches Landesmuseum/Biologiezentrum Linz
cAss..... author's private collection

***Oxypodinus floricola* sp.n. (Figs 1-14, 17)**

Holotype ♂: Madagascar - 1250 m, Manantenina, Mandraka reserve, near Mandraka, 18.91°S, 47.91°E, 23.I.2006, A. Erpenbach / Holotypus ♂ *Oxypodinus floricola* sp.n. det. V. Assing 2006 (cAss). P a r a t y p e s : 7 ♂ ♂, 13 ♀ ♀: same data as holotype (OÖLL, cAss).

D e s c r i p t i o n : 3.0-4.5 mm. Body blackish brown to black; legs yellowish; antenna dark brown, with the basal 3-4 antennomeres yellowish.

Head distinctly transverse and with sparse fine puncturation; microsculpture absent; eyes very large and bulging (Fig. 1); antennae with antennomere III as long as or slightly shorter than II, IV subquadrate, V-X transverse and of increasing width; IX-X distinctly larger (longer and broader) than VI-VIII; XI approximately as long as the combined length of IX-X.

Pronotum 1.45-1.50 times as wide as long and 1.1-1.2 times as wide as head; maximal width in or slightly behind middle; posterior angles weakly marked, indistinctly obtuse to completely rounded; margins finely marginate; posterior margin convex; puncturation fine, shallow, and often somewhat ill-defined, denser than that of head; microsculpture absent; pubescence directed caudad along midline and diagonally latero-caudad in lateral areas; pronotal hypomera in lateral view very narrowly visible anteriorly.

Elytra distinctly wider than and at suture approximately 1.3 times as long as pronotum; puncturation more distinct and well-defined than that of head and pronotum; interstices on average approximately as wide as diameter of punctures; microsculpture absent. Hind wings fully developed. Metatarsomere I almost as long as the combined length of II-III.

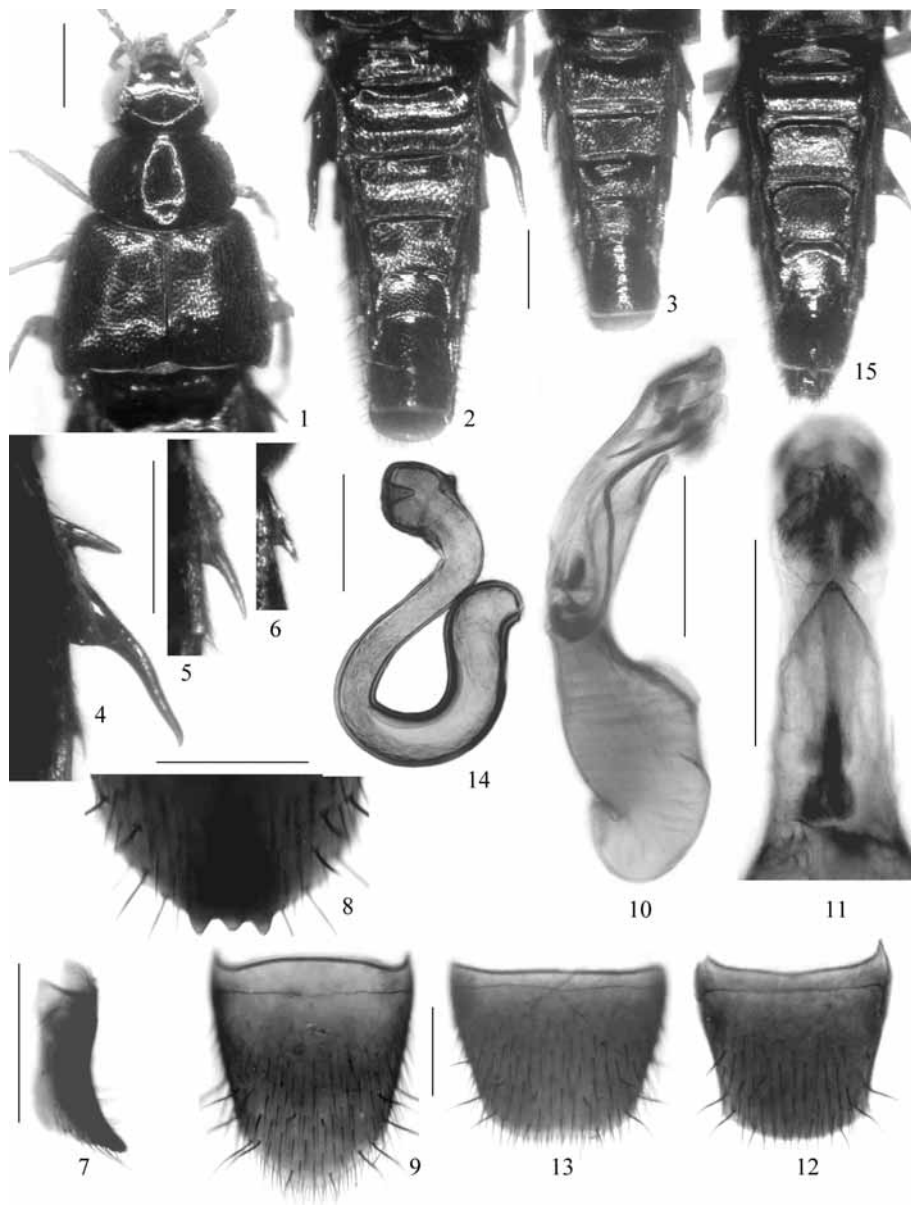
Abdomen distinctly narrower than elytra, gradually tapering posteriad; segments III and V-VIII with sexual dimorphism; tergites III-VI with dense and moderately coarse, tergites VII-VIII with distinctly finer and sparser puncturation; posterior margin of tergite VII with pronounced palisade fringe (Fig. 2).

♂: sternite III with more or less pronounced lateral processes of characteristic shape (Figs 2-6); posterior margins of tergites V-VI in large ♂ ♂ distinctly concave, in small ♂ ♂ weakly concave; tergite VII in large ♂ ♂ smoothly elevated posteriorly (i. e. distinctly convex in cross-section; tergite VIII in large ♂ ♂ posteriorly distinctly bent upwards in lateral view (Fig. 7), posterior margin dentate (Fig. 8); sternite VIII oblong, its posterior margin distinctly convex (Fig. 9); median lobe of aedeagus as in Figs 10-11.

♀: sternite III unmodified; tergites V-VI similar to those of small ♂ ♂; tergites VII-VIII unmodified (Fig. 12); sternite VIII transverse, its posterior margin truncate or weakly concave in the middle, and with weakly modified marginal setae; spermatheca as in Fig. 14.

E t y m o l o g y : The name (Latin, noun in apposition: inhabitant of flowers) alludes to the habitat of this species.

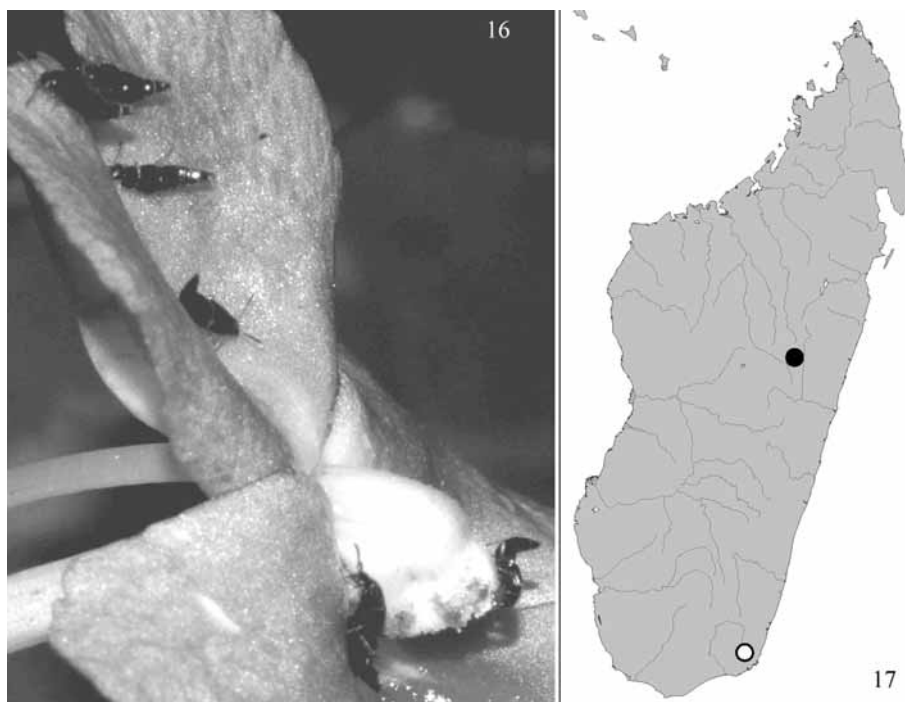
I n t r a s p e c i f i c v a r i a t i o n : The species is subject to pronounced intraspecific variation. While the females are rather uniform in size and other characters, the body size and the secondary sexual characters of the male may vary considerably. In large males the secondary sexual characters are fully pronounced, whereas in very small males they may be completely absent; transitional character states are observed in males of intermediate size (Figs 2-7).



Figs 1-15: *Oxypodinus floricola* sp.n. (1-14; holotype: 1, 2, 4, 7, 10-11) and *O. levasseuri* PACE (15): (1) forebody; (2-3, 15) ♂ abdomen; (4-6) processes of ♂ sternite III of ♂♂ of large (4), intermediate (5), and small size (6); (7) ♂ tergite VIII (large male) in lateral view; (8) posterior part of ♂ tergite VIII in antero-dorsal view; (9) ♂ sternite VIII; (10) median lobe of aedeagus in lateral view; (11) apical part of median lobe in ventral view; (12) ♀ tergite VIII; (13) ♀ sternite VIII; (14) spermatheca. Scale bars: 1-6, 15: 0.5 mm; 7-13: 0.2 mm; 14: 0.1 mm.

Comparative notes: The species is readily distinguished from all its congeners by the highly distinctive male primary and secondary sexual characters, as well as by the shape of the spermatheca. For illustrations of the genitalia and the habitus of other *Oxypodinus* species occurring in Madagascar see PACE (1999). In the key by PACE (1999), it would key out at couplet 14 together with *O. andringitrensis* PACE and *O. apicicornis* PACE. From both species, *O. floricola* is easily separated also by the complete absence of microsculpture on the forebody. Based on the morphology of the aedeagus and the male secondary sexual characters, *O. floricola* is apparently closely related to *O. bispinosus* PACE, which, however, has a much more pronounced crista apicalis of the median lobe of the aedeagus, a differently shaped ventral process of the aedeagus (especially in ventral view), microsculptured pronotum and elytra, and which is of much paler coloration.

Distribution and bionomics: The type locality is situated near Mandraka, eastern central Madagascar (Fig. 17) at an altitude of 1250 m. The specimens were collected from inflorescences of *Impatiens lyallii* BAKER in a secondary rain forest near a road margin. The beetles were observed in the inflorescences as early as the day after they had opened. Apparently, the beetles were feeding pollen from the stamina. Several specimens were observed in copula (ERPENBACH pers. comm.).



Figs 16-17: (16) *Oxypodinus levasseuri* in inflorescence of *Impatiens vilersii* (photo by A. Erpenbach); (17) records of *O. floricola* (filled circle) and *O. levasseuri* (open circle) in Madagascar.

***Oxypodinus levasseuri* PACE (Figs 15, 17)**

Material examined: **Madagascar:** 20 exs., Fort Dauphin, Andohahela National Park, Col de Manangotry, 24.74°S, 46.85°E, 650 m, primary rain forest near road, XI.2005, leg. Erpenbach (cAss).

Comments: The species was described by PACE (1999) based on material from "N.-O. de Fort-Dauphin, Massif de l'Andohahelo", apparently close to the locality reported above (Fig. 17). Unlike most of the males examined here, the holotype illustrated in PACE (1999: Fig. 542) seems to lack any modifications of the male abdominal sternites III and IV; moreover, PACE (1999) indicates that the body is "jaune rougeâtre, avec une large bande abdominale brune", where as the present material is of dark brown to blackish coloration. On the other hand, the primary sexual characters, including the highly distinctive spermatheca (see PACE (1999: Fig. 543)) are identical. Also, the length and shape of the lateral processes of sternite III and IV are subject to pronounced intraspecific variation; in the smallest of the six males examined, they are almost completely reduced. Thus, the evidence suggests that the holotype is probably a very small teneral male. The processes of a larger male are illustrated in Fig. 15.

The species is currently known only from the Andohahela range in the Fort Dauphin region, southeastern Madagascar (Fig. 17). The specimens listed above were collected from inflorescences of *Impatiens vilersii* CONSTANTIN & POISSON, where they were encountered in considerable numbers, even on blossoms that had opened only during the preceding night. The beetles seemed to be feeding pollen from the stamina (Fig. 16). Repeatedly, copulating beetles were observed (ERPENBACH pers. comm.).

Acknowledgement

I am most grateful to Arne Erpenbach for making the *Oxypodinus* material available for examination, for providing remarkable data on the life history of the species and for the photograph Fig. 16.

Zusammenfassung

Oxypodinus floricola sp.n. wird beschrieben und abgebildet, und ein weiterer Nachweis von *O. levasseuri* PACE wird gemeldet. Die männlichen sekundären Geschlechtsmerkmale von *O. levasseuri* werden abgebildet. Nach Feldbeobachtungen leben beide Arten in den Blüten von *Impatiens*-Arten.

References

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